

Amendments to the Claims

This listing of claims shall replace all prior versions, and listings, of claims in the instant Application.

Claim 1 (Currently Amended) A non-contact ~~roll contour measuring~~ apparatus for measuring the shape or surface characteristics of a work roll comprising

an ~~analog~~ a sensor having a non-contact measuring probe,
a linear rail,
a means for moving the sensor along the rail at a non-contact measuring distance from the surface of the work roll and in a line which is in parallel with the center line of a the work roll,
a means of collecting shape or surface characteristics data from the sensor.

Claim 2 (Original) The apparatus of claim 1 further comprising a means for positioning the rail in parallel with the center line of the roll.

Claim 3 (Original) The apparatus of claim 1 wherein the sensor is a capacitance sensor.

Claim 4 (Original) The apparatus of claim 1 further comprising a means of translating and displaying the data.

Claim 5 (Original) The apparatus of claim 1 wherein the sensor comprises multiple measuring probes for simultaneously measuring two or more of crown, taper, Ra, PPI, traverse and body diameter.

Claim 6 (Original) The apparatus of claim 1 wherein the probe base line specification measuring range equals 0.00" to 0.0005" with a tolerance of $\pm 1\%$.

Claim 7 (Original) The apparatus of claim 1 wherein the probe base line specification measuring range equals 0.00" to 0.00005" with a tolerance of $\pm 0.5\%$.

Claim 8 (Currently Amended) A method of measuring the shape or surface characteristics of a work roll comprising

providing ~~an analog~~ a sensor having a non-contact measuring probe with a linear rail and a means for moving the sensor along the rail at a non-contact measuring distance from the surface of the roll and in a line which is in parallel with the center line of a the work roll, moving the sensor along the rail while collecting shape or surface characteristics data from the sensor.

Claim 9 (Original) The method of claim 8 further comprising the steps of translating and displaying the data.

Claim 10 (Currently Amended) The method of claim 9 wherein the data is displayed as a measurement ~~measurements~~ of crown, taper, Ra, PPI, traverse, body diameter, defects or inclusions.

Claim 11 (Currently Amended) The method of claim 8 wherein the data is collected at a rate of about 1,000 ~~traces~~ data points per second.

Claim 12 (Currently Amended) The method of claim 8 wherein the data is collected at a rate of about 4,000 ~~traces~~ data points per second or 16,000 ~~traces~~ data points per second or more than 16,000 data points per second.

Claim 13 (New) The method of claim 8 wherein the roll is rotated about its center line during measuring.

Claim 14 (New) The apparatus of claim 1 further comprising a means for rotating the roll about its center line.

Claim 15 (New) The apparatus of claim 1 wherein the sensor is an analog sensor.

Claim 16 (New) The method of claim 8 wherein the sensor is an analog sensor.